

GP-303049

## ADAPTIVE INJECTION TIMING FOR DIESEL ENGINES

## ABSTRACT OF THE DISCLOSURE

A diesel engine emission control system which optimizes fuel injection timing over a range of air temperatures, air pressures, and engine air flow rates. The emission control system includes a control module

5 interfacing with a fuel injection timing module which in turn interfaces with an engine fuel injection system having fuel injectors. The control module receives data from an air temperature sensor, an air pressure sensor, and an engine boost pressure sensor. The control module determines air density and the air flow rate through the engine to determine optimal fuel injection

10 timing. The injection timing information is relayed to the injection timing module which alters the timing of the fuel injectors to operate the engine at a maximum efficiency possible within applicable emission regulation limits.